

CLAIMS

1. A wrist unit (6), intended to be connected to a robot arm in an industrial robot, wherein the wrist unit comprises a wrist housing (7), a wrist part/tilt (8, 33) pivotally journalled in the wrist housing (7) for rotation about a fifth axis of rotation (E), and a turn disc (9) rotatably journalled in the wrist part/the tilt (8, 33) for rotation about a sixth axis of rotation (F), wherein the sixth axis of rotation (F) is configured to cross the fifth axis of rotation (E), the wrist housing (7) further comprising a first transmission (10) configured to transmit rotation about the fifth axis of rotation (E) to the wrist part/the tilt (8, 33), and a second transmission (11) configured to transmit rotation about the sixth axis of rotation (F) to the turn disc (9), **characterized** in that the second transmission (11) comprises a drive-shaft tube (12) arranged symmetrically along the symmetry axis (G) of the wrist housing,
- the drive-shaft tube (12) is configured to form a continuous channel (14),
- the channel (14) is configured to receive and accommodate continuous cabling.
2. A wrist unit according to claim 1, wherein at least one drive means (30, 31) is arranged for driving one of the transmission (10,11).
3. A robot arm comprising a module in the form of a wrist unit according to claim 1 or 2.
4. A wrist unit according to any of the preceding claims, wherein the wrist part/the tilt (8) is journalled in double-sided bearings.
5. A wrist unit according to any of claims 1-3, wherein the wrist part/the tilt (33) is journalled in a single-sided bearing.

6. An industrial robot comprising a control system and a manipulator which includes a robot arm (5) and a wrist unit (6), arranged on the robot arm, according to claim 1, said wrist unit comprising a wrist housing (7) arranged for rotation about a fourth axis of rotation (D), a wrist part/tilt (8, 33) pivotally journalled in the wrist housing (7) for rotation about a fifth axis of rotation (E), and a turn disc (9) rotatably journalled in the wrist part/the tilt (8, 33) for rotation about a sixth axis of rotation (F), wherein the sixth axis of rotation (F) is configured to intersect the fifth axis of rotation (E), the wrist housing (7) further comprising a first transmission (10) configured to transmit rotation from a first drive means (30) to the tilt (8, 33) for rotation about the fifth axis of rotation (E), and a second transmission (11) configured to transmit rotation from a second drive means (31) to the turn disc (9) for rotation about the sixth axis of rotation (F), **characterized** in that the first transmission (11) comprises a drive-shaft tube (12) arranged symmetrically along the fourth axis of rotation (D), the drive-shaft tube (12) is configured to form a continuous channel (14), and that cabling (29) is arranged drawn through the channel (14), through the wrist part/the tilt (8, 33) and is secured to the turn disc (9), that at least one section of the cabling (14a) is radially fixed to the second drive-shaft tube (12).

7. An industrial robot according to claim 6, wherein the robot arm (5) comprises at least one drive means (30,31).

8. An industrial robot according to claim 6, wherein the drive means (30,31) are arranged inside the robot arm (5).

9. An industrial robot according to claim 6, wherein the drive means (30,31) are arranged on the robot arm (5).

10. An industrial robot according to claim 6, wherein the wrist unit (6) comprises at least one drive means (30,31).

11. A method in an industrial robot (1) with a control
5 system (1a) and a manipulator comprising a robot arm (5) and a wrist unit (6), arranged on the robot arm, said wrist unit comprising a wrist housing (7) arranged for rotation about a fourth axis of rotation (D), a wrist part/tilt (8, 33) pivotally journalled in the wrist housing (7) for
10 rotation about a fifth axis of rotation (E), and a turn disc (9) rotatably journalled on the wrist part/the tilt (8, 33) for rotation about a sixth axis of rotation (F), wherein the sixth axis of rotation (F) is configured to cross the fifth axis of rotation (E), the wrist housing (7)
15 further comprising a first transmission (10) configured to transmit rotation from a first drive means (30) to the tilt (8) for rotation about the fifth axis of rotation (E), and a second transmission (11) configured to transmit rotation from a second drive means (31) to the turn disc (9) for
20 rotation about the sixth axis of rotation (F), wherein the control system (1a) controls the first (30) and second (31) drive units, **characterized** in that
the control system (1a) is brought to control the first (30) and second (31) drive units such that the gear ratio
25 between a drive-shaft tube (13), included in the first transmission (10), and the turn disc (9) is 1:1.

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